

## REMARKS

This preliminary amendment addresses requirements in the Notice to File Corrected Applications Papers mailed on 12/24/2003. The present amendments are made to the substitute specification enclosed with this paper.

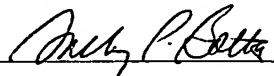
This preliminary amendment cancels Drawings 13, 14 a), 15c), 15d), and references made thereto. The preliminary amendment also shows changes in red ink made to drawings 3, 4, 5, 6, 7, 8, 9, 10 and 11, made to comply with the above mentioned Notice to File Corrected Applications Papers.

Figures 14b, 15a-b, 15e and references made thereto have been canceled.

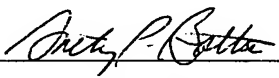
Tables 12, 13 on pages 60, 61, respectively, and Tables 18a-e, 19 and 20 have all been rewritten to be presented in proper format and to comply with the margin requirements.

No new matter has been entered into this application by way of amendment.

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Anthony P. Bottino  
Reg. No. 41,629  
Feb 20, 2004  
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Dated

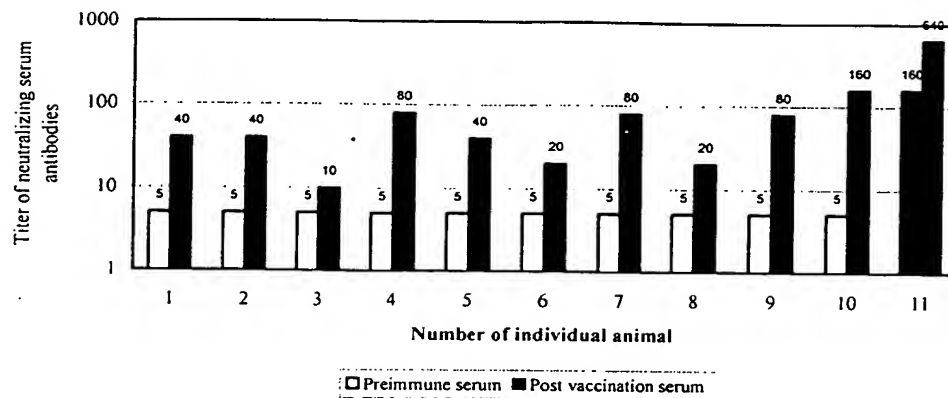
Respectfully submitted,

  
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A

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmid pCR3.1-EAV-O5-BX-C14 expressing ORF 5 of equine arteritis virus



B

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmid pCR3.1-EAV-O5-BX-C14 expressing the ORF 5 of equine arteritis virus

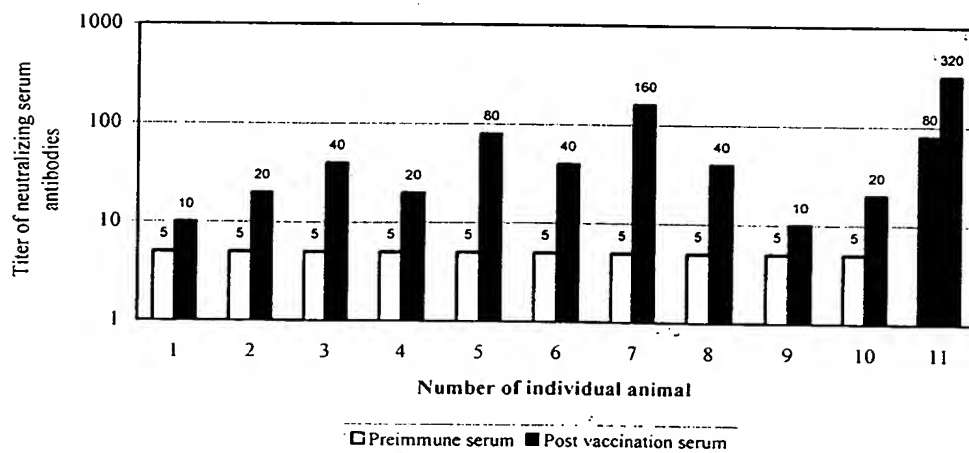


Fig. 3:

The results of neutralization tests obtained by the analysis of the sera of the individual Balb/c mice that were inoculated in two independent experiments (A and B) with the DNA of recombinant plasmid pCR3.1-EAV-O5-BX-C14 harboring and expressing ORF 5 of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmids pCR3.1-EAV-O5-BX-C14 and pCR3.1-EAV-O7-BX-C3 expressing ORF 5 and 7 of equine arteritis virus

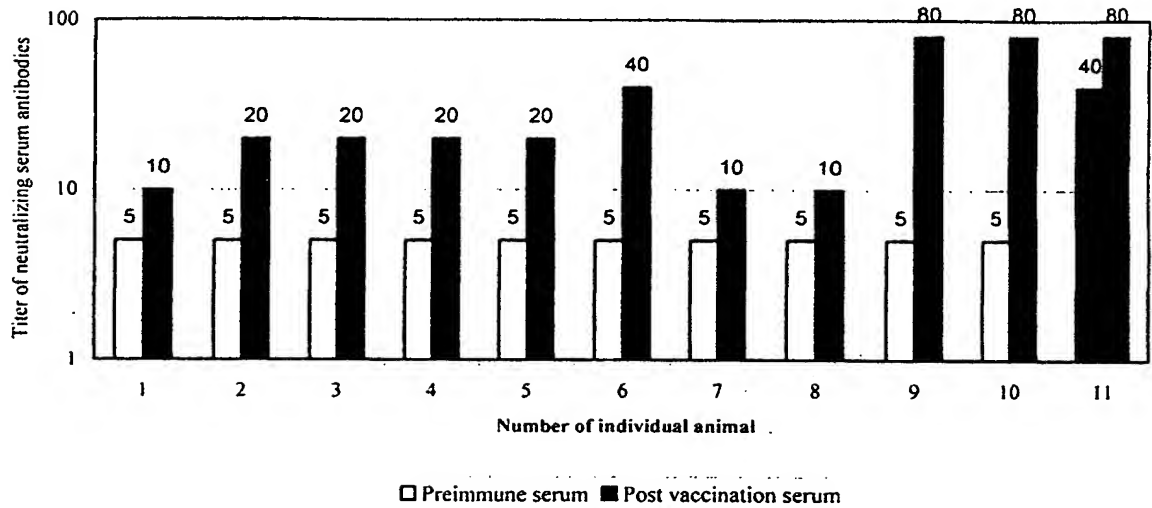


Fig. 4:

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmids pCR3.1-EAV-O5-BX-C14 and pCR3.1-EAV-O7-BX-C3 harboring and expressing ORFs 5 and 7 of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmids pDP-EAV-O7-BgS-C2 and pDP-EAV-O5-BgS-C1 expressing ORF 7 and 5 of Equine arteritis virus, as well as pWS2ms expressing IL-2 gene

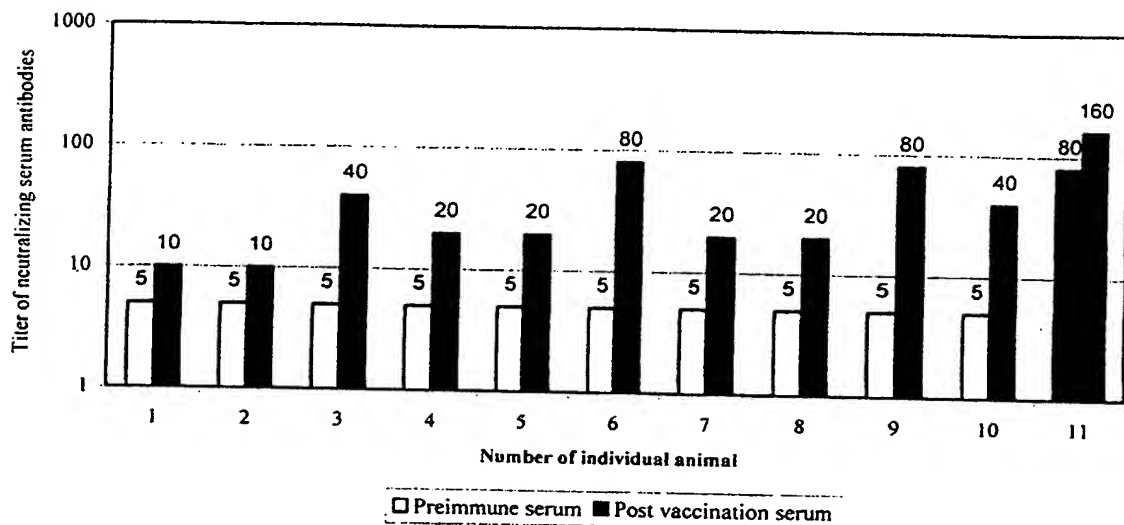
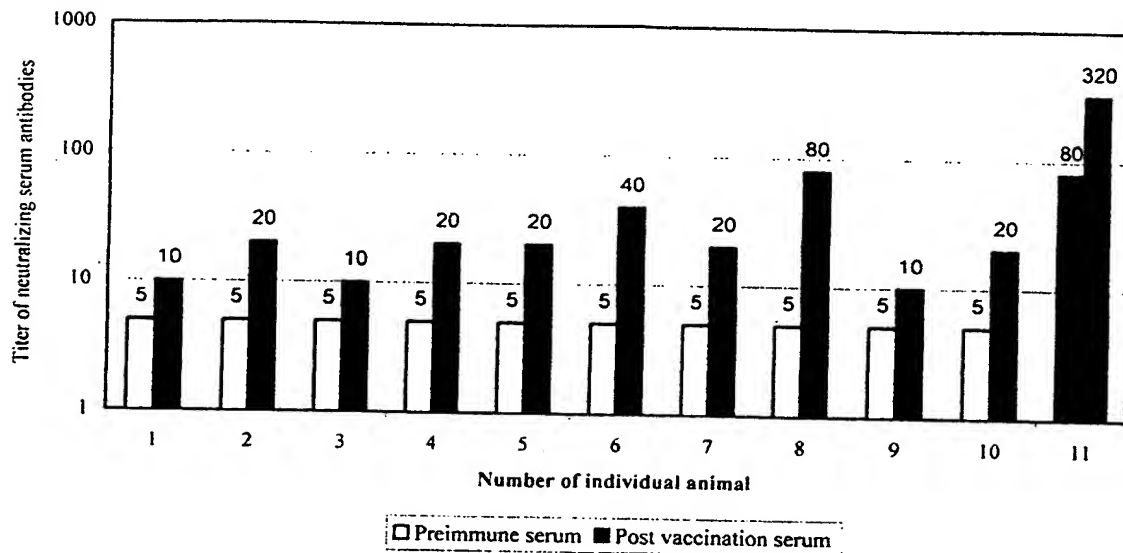


Fig. 5:

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmids pDP-EAV-O5-BsS-C2 and pDP-EAV-O7-BsS-C1 harboring and expressing ORFs 5 and 7 of equine arteritis virus (EAV). The recombinant plasmid pWS2ms expressing mouse IL-2 gene was administered as immune modulating factor. The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmids pCR3.1-EAV-O5-BX-C14 and pCR3.1-EAV-O6-BE-C4 expressing ORF 5 and 6 of equine arteritis virus



**Fig. 6:**

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmids pCR3.1-EAV-O5-BX-C14 and pCR3.1-EAV-O6-BE-C4 harboring and expressing ORFs 5 and 6 of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmids pCR3.1-EAV-O3-BX-C1 expressing ORF 3 of equine arteritis virus

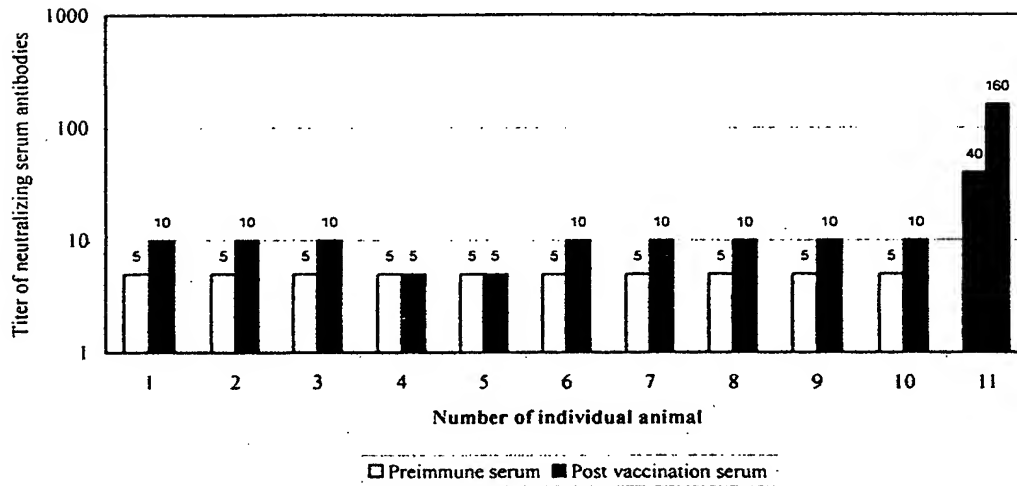


Fig. 7:

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmid pCR3.1-EAV-O4-BX-C3 harboring and expressing ORF 4 of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmids pCR3.1-EAV-O4-BX-C3 expressing ORF 4 of equine arteritis virus

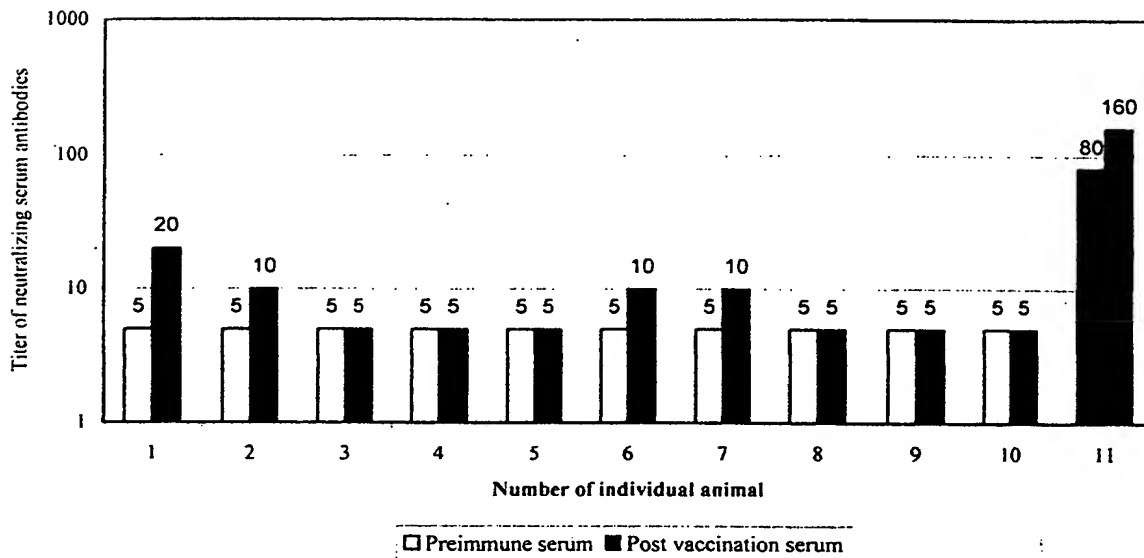


Fig. 8:

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmid pCR3.1-EAV-O4-BE-C3 harboring and expressing ORF 4 of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmid pC3.1-EAV-O5-del-121 expressing the amino terminus (aa 1-121) of ORF 5 of equine arteritis virus

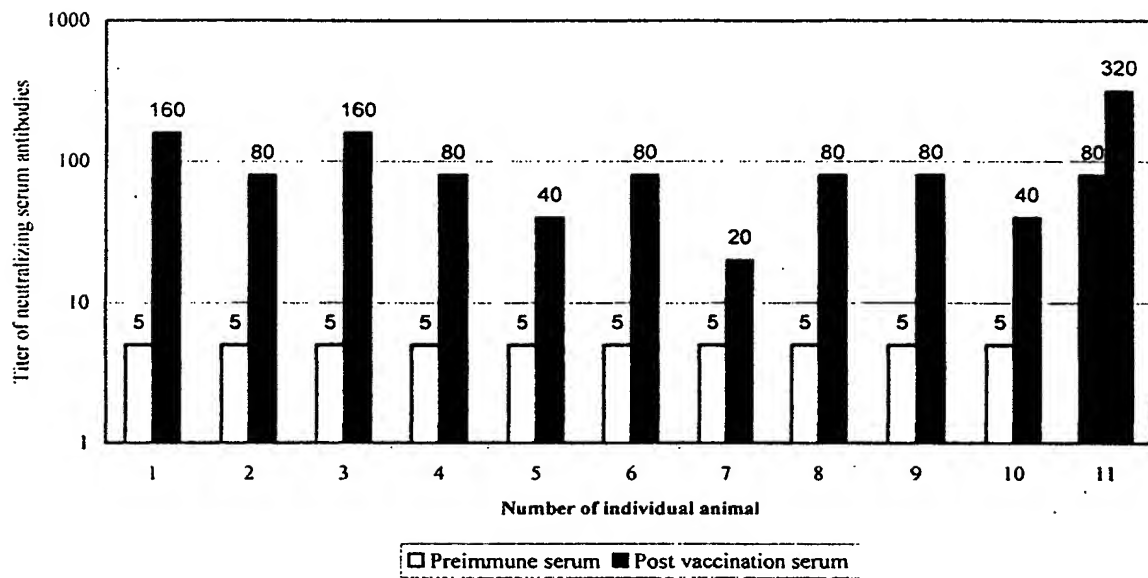
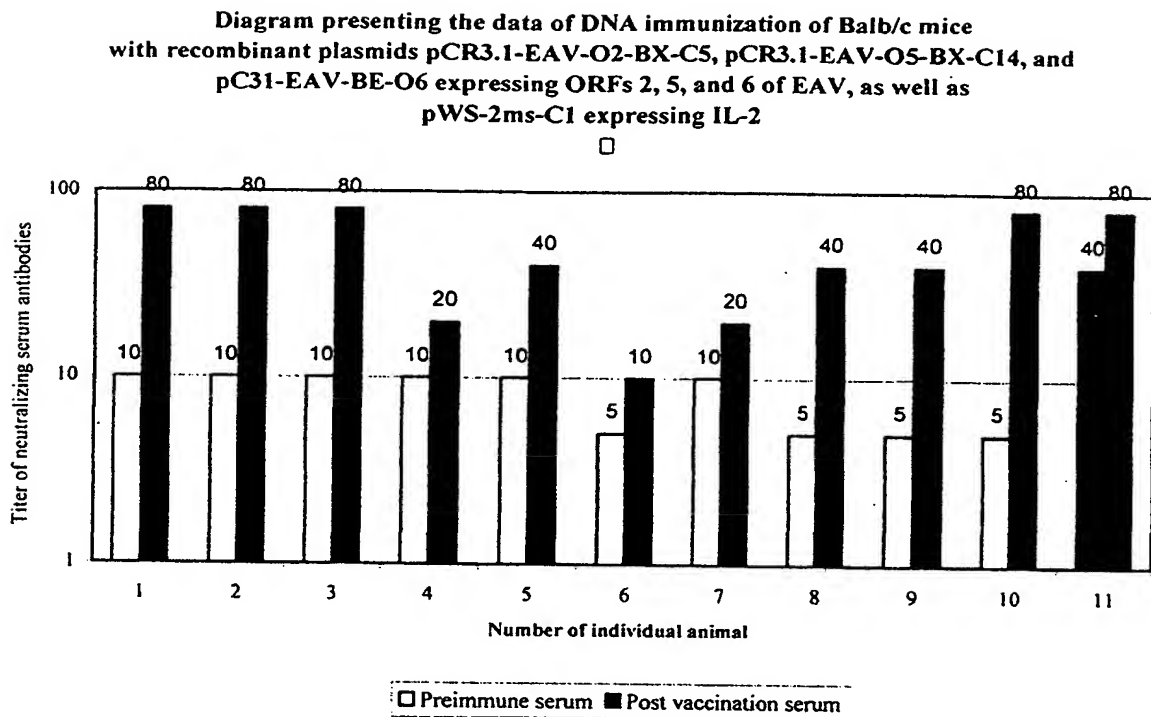


Fig. 9:

The results of neutralization tests obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmid pCR31-EAV-O5-del-121 harboring and expressing the N-terminal hydrophilic ectodomain of  $G_L$  envelope glycoprotein (amino acid residue 1-121 of ORF 5) of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.





**Fig. 10:**

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmids pCR3.1-EAV-O2-BX-C5, pCR3.1-EAV-O5-BX-C14, and pCR3.1-EAV-O6-BE-C4 harboring and expressing ORFs 2 (small glycoprotein), 5 (large envelope glycoprotein), and 6 (membrane protein), of equine arteritis virus (EAV). The recombinant plasmid pWS2ms (expressing mouse IL2 gene) was administered as immune modulating factor. The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.

Diagram presenting the data of DNA immunization of Balb/c mice with recombinant plasmids pCR3.1-EAV-O2-BX-C5 and pCR3.1-EAV-O4-BX-C3 expressing ORF 2 and 4 of equine arteritis virus

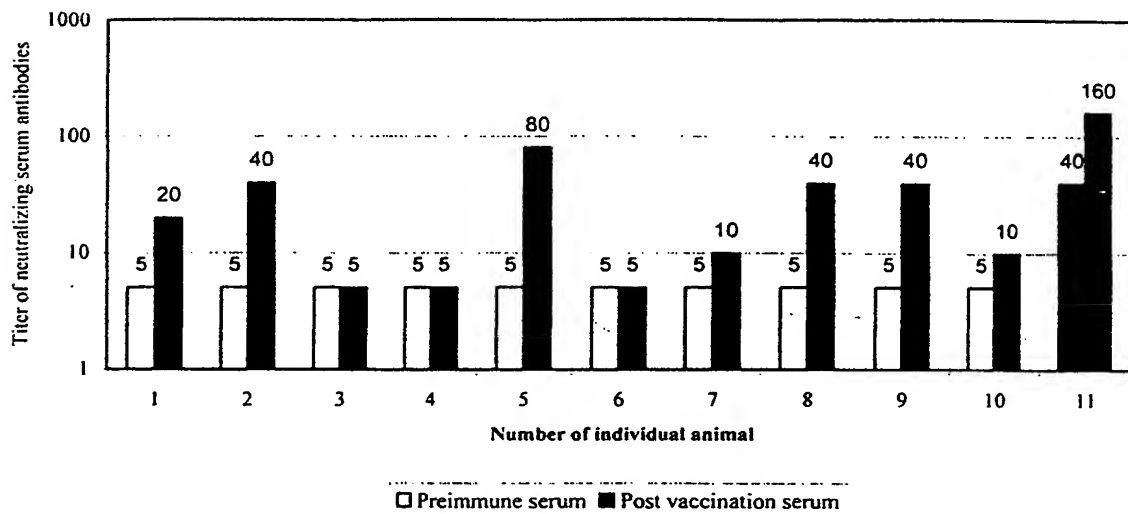


Fig. 11:

The results of neutralization test obtained by the analysis of the sera of the individual Balb/c mice that were inoculated with the DNA of recombinant plasmids pCR3.1-EAV-O2-BX-C5 and pCR3.1-EAV-O4-BX-C3 harboring and expressing ORFs 2 and 4 of equine arteritis virus (EAV). The individual animals are indicated with number 1 to 10. The white and black columns represent the data of pre and post DNA vaccinated animals, respectively. The column 11 (black color) served as internal positive control and indicates the average of maximum and minimum neutralizing titer obtained from the serum of a New Zealand white rabbit that was immunized with inactivated EAV.